

Amendments to the Claims:

This Listing of Claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-19 (canceled).

20. (new) A general purpose state machine comprising:

a first plurality of external input terminals for receiving information from an external circuit;

a first multiplexer having a plurality of input terminals, at least some of which are coupled to the external input terminals to receive the information therefrom for causing the first multiplexer to supply a first output signal indicative of one of a first branch operation, a second branch operation, or no change of operation;

a programmable memory storing a plurality of words, each word having a plurality of bits, a word from the memory being supplied in response to an address signal from a decoder;

a register coupled to receive the first output signal from the first multiplexer and in response provide a signal to the decoder to thereby cause it to generate the address signal to select one of the words in the programmable memory, the register also providing a second output signal to the first multiplexer to designate no change of operation;

wherein the word from the memory includes at least three sets of bits, with first bits to designate the first branch operation, second bits to designate the second branch operation, and third bits to be provided to the external circuit.

21. (new) A general purpose state machine as in claim 20 wherein the word from the memory further includes fourth bits to be provided to a control circuit, and the control circuit

is connected to the plurality of input terminals of the first multiplexer to cause the first multiplexer to supply the first output signal.

22. (new) A general purpose state machine as in claim 20 further comprising a second multiplexer having input terminals connected to the external input terminals and to receive at least some of the third set of bits, and connected to provide an output signal to the control circuit.

23. (new) A general purpose state machine as in claim 1 further comprising programmable logic, flag circuits and counter circuits coupled to at least some of the external input terminals and coupled to the second multiplexer to process information from the external circuit before it is provided to the second multiplexer.